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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,251	01/03/2002	Takaji Numao	1035-359	9405

7590 01/20/2004

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EXAMINER

LANEAU, RONALD

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 01/20/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,251

Applicant(s)

NUMAO, TAKAJI

Examiner

Ronald Laneau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,8,9,14,15 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 2-5,7,10-13 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 2-5 are objected to because of the following informalities:

Claim 2 and 4 require “first switching elements” and “fourth switching elements.” However, applicant discloses throughout the specification a “first switching element” and a fourth switching element.” Applicant is required to point out where exactly the specification discloses the plurality of first and fourth switch elements as claimed. If in fact applicant has support for a plurality of first and fourth switching elements as claimed then there may be antecedent basis for “the first switching element” in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 15 is rejected under 35 U.S.C. 102(e) as being anticipated by Ishii (US 6,636,194).

As per claim 15, Ishii discloses a liquid crystal display that is an electro-optic device comprising electro-optic elements (claim 1), a memory circuit provided for each of the electro-optic elements, a display operations by the electro-optic elements that is controlled using outputs from the memory circuit (fig. 3, claim 1), wherein the electro-optic elements have a reference

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voltage 122 and the memory circuit has a voltage 117 which is different than the reference voltage.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 6, 8, 9, 14, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii (US 6,636,194) in view of Okumura et al (5,945,972).

As per claims 1, 20, and 22, Ishii discloses a liquid crystal display that is an electro-optic device comprising electro-optic elements (claim 1), a memory circuit provided for each of the electro-optic elements, a display operations by the electro-optic elements that is controlled using outputs from the memory circuit (fig. 3, claim 1). Ishii does not teach a potential maintaining means as claimed but Okumura et al teach having memory elements and a capacitor at the pixel level that can be used as a potential maintaining means for each pixel (fig. 2B).

It would have been obvious to one of ordinary skill in the art to utilize the capacitor taught by Okumura et al as a potential maintaining means as claimed because it would provide a display device having memory elements that may be arranged to retain data in the background for providing the image signals (col. 3, lines 28-30).

As per claim 6, Okumura et al teach a memory means connected to a switch 125 that switches between an output from the memory means and an output from the potential means (capacitor).

As per claims 8 and 9, Ishii discloses electro-optic elements to produce a display based on a voltage or a current which corresponds to a data weight stored in the memory.

As per claims 14 and 19, none of the references uses organic led elements but it is well known in the art to utilize organic led elements as electro-optical elements as claimed.

Allowable Subject Matter

6. Claims 2-5, 7, 10-13, and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the references, either singularly or in combination, teaches or even suggests:

As per claims 2 and 3, a display wherein the electro-optic elements are provided near intersections of first wires and second wires provided in a direction crossing the first wires, the display further comprising:

first switching elements each connected at a first terminal thereof to one of the first wires; and

second switching elements each connected in series with the memory means and a second terminal of the first switching element,

wherein the second terminal of the first switching element is electrically connected to the potential maintaining means.

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As per claims 4 and 5, a display wherein the electro-optic elements are provided near intersections of first wires and second wires provided in a direction crossing the first wires,

the display further comprising:

first switching elements each connected at a first terminal thereof to one of the first wires and electrically connected at a second terminal thereof to the memory means; and

fourth switching elements each connected at a first terminal thereof to one of the first wires and electrically connected at a second terminal thereof to the potential maintaining means.

As per claim 7, a display wherein the outputs from the memory or the potential maintaining means are supplied to the electro-optic elements for a period corresponding to a weight of data stored in the memory means or the potential maintaining means.

As per claim 10, a display further comprising sixth switching elements each interposed between the potential maintaining means and either a power source wire or a ground wire.

As per claims 11-13 and 16-18, a display further comprising second memory means, provided outside a pixel area, for recording a signal from which the electro-optical elements produce a display.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Numao (US 2003/0058200) teach a display device provided with electro-optic elements respectively composed of an n-type TFT and an organic EL element, which are arranged in a matrix.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email: ronald.laneau@uspto.gov.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

9. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:


(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ronald Laneau
Examiner
Art Unit 2674

rl
January 7, 2004



RONALD LANEAU
SUPERVISOR OF PATENTS AND TRADEMARKS
U.S. DEPARTMENT OF COMMERCE